

THE TECH

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BOSTON, MASS., WEDNESDAY, APRIL 7, 1909

PRICE THREE CENTS

INFORMATION ON CO-OP SOCIETIES

**Purpose and Work of Such
Organizations in the
Colleges**

SUCCESS AT HARVARD

**Where Profits are Returned to
Members—Scholarships and
Loans at Institute**

At the annual meeting this month, the directors of the Technology Co-operative society will elect officers for that organization for its twenty-fourth season. The approach of their meeting brings to mind the question, often thought and suggested but seldom actively discussed, as to just what the Co-op really is, what it does, and whether it is doing it as effectively as it should. With this idea in view The Tech has tried to gather a little useful information on the subject.

In some other colleges co-operative societies or corporations perform much more extensive functions than is the case at the Institute; and at many no such organizations exist. Harvard has an active and flourishing society which operates a store in which goods of many kinds are sold. It also owns Lyceum Hall, and while occupying most of that building for its own use derives some income from it. The store is subdivided into departments of men's furnishings, books, stationery, tailoring and furniture; of which the second and third furnish the greater share of business. Prices are set at as low a price as is consistent with good business management, but some profit is expected. At the end of each season, after all running expenses are paid, the net profits are divided among the members in proportion to their purchases during the season. This plan has worked successfully for many years and seems to meet the approval of all persons concerned. The Harvard Co-operative Society has about 2,500 members.

At Yale a similar organization is maintained, operating a store for the sale of students' supplies and referring to a list of affiliated tradesmen for goods not kept in its own stock. The associated list is perhaps not so valuable as it has been in past times, according to a statement made by one of the officers of the corporation, but the firms on it are probably fairly well patronized. No inducement is made to members except immediate discount on purchases. This year 1642 students belong, and all members of the faculty have been made permanent members.

The Institute Co-operative Society has not attempted to cover quite so broad a field, and its work is not exactly similar. In the first place, it has at no time felt able to maintain a store of its own, except for the small supply "coops" in Engineering A and Pierce buildings. All the accounting for these small supply depots is done by MacLachlan, from whom most of the supplies come, and who is best fitted to do the work. No other method would be practicable, unless the society should operate a central store of its own, whose business warranted the engagement of a competent manager at a salary of something like \$3,000 a year; or unless some able alumnus should be found who would devote practically all of his time to the work without compensation.

With 509 members, the successful operation of such a store would require fair business ability. That the work could be done entirely by students is impossible. Probably the society could, with good management, succeed in keeping prices at, or slightly below, their present level, but the change would probably not be great from present rates. Comparison of MacLachlan's scale of prices with those at other stores usually shows that the hostile feeling which rises in certain places at the

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CAPT. H. S. GOTT WINS TECH MEET

**Belden 1909, Jacobs 1910,
and Allen 1911, Tied
for Second Place**

BOXING MATCH A JOKE

**R. C. Jacobs 1910 Elected Captain
of Next Year's Team—Jacobs
Chosen Manager**

With the annual spring gym meet Monday evening, Technology's gym season came to a close. Capt. H. S. Gott 1910, easily carried off the cup for the individual honors, with C. H. Belden 1909, R. C. Jacobs 1910, and W. D. Allen 1911, tying for second place. Gott scored twelve points, while the other made only six tallies each. Three prizes were awarded in the horizontal and parallel bar work, tumbling, flying rings, and the side horse. A wrestling match and a boxing tournament finished the rest of the program. Gott's work on the parallel bar, and that of C. J. Belden on the flying rings were the two star events of the gymnastic work.

The wrestling match tied by H. S. Pardee 1909, and E. C. Meyers 1912, after a hard struggle. Only three men came to the front in the boxing championship event, H. D. Billings 1910, R. S. Breyer 1910, and H. H. Stevens 1912. Billings defeated both his opponents handily, although Breyer put up a good argument.

After the meet, R. C. Jacobs 1910, was elected captain of the team for next year. Jacobs 1910, and S. H. Seelye 1912, were chosen manager and assistant manager, respectively.

The summary:

Horizontal bar—Won by W. D. Allen 1911; second, Capt. H. S. Gott 1910; third, R. C. Jacobs 1910.

Parallel bars—Won by Capt. H. C. Gott 1910; second, S. H. Seelye 1912; third, C. J. Belden 1909.

Side-horse—Won by A. Alter 1911; second, S. H. Seelye 1912; third, R. C. Jacobs 1910.

Flying rings—Won by C. J. Belden 1909; second, Capt. H. S. Gott 1910; third, W. D. Allen 1911.

Tumbling—Won by R. C. Jacobs 1910; second, R. White 1912; third, Capt. H. S. Gott 1910.

Judges—W. C. Towne and A. J. Bruce, instructors of the Technology gym; Dr. Garland, Boston Y. M. C. A., and B. K. Sharp, M. I. T. 1907.

ADDRESS ON BOILERS

**Emmonds of Heine Co. Speaks to
Mechanicals Tonight**

Tonight at eight o'clock Mr. Emmonds of the Heine Boiler Company, will address the Mechanical Engineering Society on the method of construction of the Heine tubular boiler. The subject is a most appropriate one, since it is something which all mechanical engineers are bound to come up against sooner or later, and Mr. Emmonds is an authority. The lecture will be illustrated with a number of lantern slides, and refreshments will be served after the talk.

Non-members will be admitted upon payment of twenty-five cents. New applicants submitting their names at this time will not be charged.

Mr. Bailey, who was to have spoken on "Coal," has been called out of town, and will be unable to be present.

The second annual Circus and Hippodrome of the University of Pennsylvania was given last Saturday evening under the auspices of the Gym Club of Pennsylvania. Over 200 students took part in the performance, which "spotted" a programme of twenty different acts.

SUN SPOTS DUE TO VORTICES

**Caused by Particles of Elec-
tricity on Sun
Revolving**

LECTURE BY DR. HALE

**At Last Meeting of Society of
Arts for This Year
Attendance Good**

Sun spots are caused by vortices in the atmosphere of the sun, was the statement of Dr. Geo. E. Hale 1890, in his lecture Monday night on "Solar Cyclones and Magnetic Fields," delivered at the last meeting for this year of the Society of Arts.

The work of the Carnegie Solar Observatory at Mount Wilson, Pasadena, California, of which Dr. Hale is director, is one of the most important divisions of work of the Carnegie Institution, both from a financial point of view and from results accomplished. This work is the study of cosmic evolution, principally by means of our sun, a typical star.

Dr. Hale's lecture dealt with only one phase of this solar work, namely, the study of sun spots. In the photographs of sun spots, taken by means of the reflecting telescope, with ordinary light, they appear to be black openings in the solar clouds. In order to study them more closely, it is necessary to photograph the sun by only one kind of light. For this purpose a very large spectroscopic is used which is attached to the telescope. A photograph of the sun is then taken by means of the calcium light emitted, and it is seen that the sun spots are really obscured by clouds of luminous calcium vapor. If a photograph is taken, however, with the red light of hydrogen, an entirely different appearance of the spots is obtained. They are surrounded by lines of stress very much as is a magnet in iron filings. Thus sections of these disturbances are obtained at three levels, first, the lowest level of the sun itself, seen in an ordinary photograph; second, the level of the calcium vapor, and third, the highest level of the red line of hydrogen. Their appearance suggested the idea of vortices, and it was the work of the astronomers to prove or disprove this theory.

It is known that particles of negative electricity, cathode rays, are emitted by the heated vapors of the metals. These particles, if they are whirled around, will produce a magnetic field. A magnetic field has the property of breaking the single lines of the spectrum into double lines, if the luminous body is viewed along the direction of the lines of force. Therefore, if sun spots are vortices caused by a preponderance of negative electricity, these electric particles will produce an electric field which will break the lines of the spectrum into two parts. Accordingly, these double lines were looked for, but at first without success, as a sufficiently large spectroscopic could not be attached to a movable telescope. A vertical tower telescope was then erected with which a large spectroscopic could be used, and the double lines were seen without difficulty. In the meantime, in the laboratory magnetic fields had been produced, and their effects upon spectra studied. These effects were evident in the spectrum of the sun spots, showing conclusively that the sun spots are whirlpools of negative electricity in the atmosphere of the sun.

In order to study spots on the other stars, a large reflecting telescope, with a 100-inch mirror, has just been constructed on Mt. Wilson, in the face of serious difficulties in the way of transportation. With this telescope—the largest reflecting telescope in the world—

(Continued on page 4.)

RELAY TEAM TO ENTER PENN MEET

**Wesleyan, Amherst, Brown,
John Hopkins in
Tech's Class**

GAMES ON APRIL 24

**Training Now Going on at Field
and Men are Fast Getting
Into Good Shape**

Technology this year will be represented at the annual spring relay games at Franklin Field, Philadelphia, on April 24, by one of the strongest teams that the Institute has ever produced. The trials will probably be held some time during the week before the team leaves, which will probably be picked from the following: Captain Carl Gram, K. D. Fernstrom, W. C. Salisbury, A. L. Moses and P. D. White. Four men and one substitute will be picked to take the trip. Gram is expected to compete in the century dash, but none of the others will enter anything but the relay race.

Nearly two hundred colleges will be represented at the meet, including two new entries, those of Harvard and Wisconsin, neither of whom have ever sent a team to the games before. The Badgers will enter a four-mile squad in addition to their one-mile team. Harvard will be represented by a mile team, and Rand will enter the 120-yard hurdles.

Technology's opponents in the relay race have not as yet been announced, but will probably be picked from the following: Wesleyan, Amherst, Brown, John Hopkins, and some of the western colleges. The Institute team should be able to take care of any of these squads, and compete on even terms with any college represented in the games.

Although the weather is still cold, a number of men are reporting regularly at the Field, getting into shape for the spring and college meets. The number of freshmen out is remarkable through the number of men from the first year class out for the track work is not as great as one would think would be out, because of compulsory exercise for some at the gym.

P. D. White, 1911, is showing great form in the half mile and there are no close competitors for this distance, while in the quarter and the 220-yard dash the regular men on the relay team will cover the ground in record time. So far there are no finds in the dash work.

J. S. Grant 1912, and L. B. Walker 1912, are the best 1912 men in the dashes. J. Becker, the freshman who showed up so well at the indoor meet, has not been out so far this spring.

In the pole vault, W. D. Allen 1911, is still at the top, H. Greenleaf 1912, and E. Mangan 1912, are the only freshmen of promise in this event.

H. S. Benson, the 1912 star, is out with the freshman cross-country team at present and has not done any regular training for the events at the Field so far, but will doubtless run in the mile.

With the men in the dashes, and the distance men, who have had experience in the intercollegiate, the prospects of capturing a good place at the N. E. I. A. A. this year are excellent.

CALENDAR

WEDNESDAY, APRIL 7.

7.00 P. M.—Civil Engineering Society meeting, 11B.

8.00 P. M.—Mechanical Engineering Society meeting, Union.

THURSDAY, APRIL 8.

1.00 P. M.—1909 Class Meeting, Huntington Hall.

FRIDAY, APRIL 9.

6.30 P. M.—New York Club meeting in Union.

THE TECH

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Wednesday, April 7, 1909

As announced in another article the mile relay team will be allowed to go to Philadelphia. Whether they will go depends on the amount of money subscribed at the Institute to defray the expenses of the trip. If a comparatively few men would sacrifice a few luxuries and put the equivalent in cash into the A. A. treasury, there is little doubt but that Tech's fast quartet will bring in a new trophy for the Union.

Attention is called to the article on the Co-operative Society in this issue. The importance of this organization is often overlooked, but anything which may be a means of saving to 509 men, now members, or 1,500 who might be, and a means of direct aid to a considerable number who need it, is surely worth keeping in sight. Too little is known by the average student and member of the workings of this body, which is controlled by a small board of directors.

Whether the present organization is the most effective possible is perhaps a question. The chief fault in it is that the directors meet but once a year, and then name their successors, the members at large having no voice whatever in the management of the society. The use of the society's funds is a worthy one, and probably no objection can be made to it, although it somewhat belies the name "co-operative." A little more general interest in the society would be helpful.

EMPIRE STATE DINNER

Friday evening at 6.15 the New York State Club will meet for dinner in the small upstairs room of the Union. The intention of the officers of the Club is to finish their meal in time to attend the regular Union Night entertainment at 7.45. Postals have been sent to all men who have attended any previous meeting of the organization; but any man from New York State, whether he has received a notice or not, will be welcomed. The price of the dinner will be fifty cents. In order that proper arrangements may be made with the dining room authorities, men intending to be present at the dinner are requested to notify W. D. Green 1909, secretary, Cage, by Thursday afternoon.

ARCHITECT'S RECORD IS JUST PUBLISHED

Many Good Illustrations of
Best Work Done by
Men This Year

ATELIER SYSTEM BEST

Interesting Articles on Value of
Studying and Traveling
in Europe

With many splendid cuts and several interesting articles the February Technology Architectural Record, just published, is better than ever.

Among many of the best drawings done in the department to date is published the work that won E. I. Williams 1908, the American Academy in Rome Competition.

Study at Home and Abroad.

In an interesting descriptive article on "Architectural Study at Home and Abroad," Robert P. Bellows 1904, tells of some of the French teachers and, very briefly, of some of the methods of teaching and practicing architecture today. Mr. Bellows believes that the time is soon coming when American advanced students of architecture will stay at home to do the work for which they now go abroad.

"European Travel for the Student of Architecture," a comprehensive article by Miss Ida A. Ryan 1905, on the value of an intimate knowledge of European architecture to American professional men, describes the various styles to be found in the different countries on the continent and in England, contrasting them in detail with the scarcity of true

architecture here in America.

Commenting editorially, the Record attributes to the atelier the high standard of the Institute architectural department.

Notes on building materials—lime, cements, mortars, and concretes—Alumni news, and department news conclude one of the best of Architectural records.

A. A. ACTS ON INSIGNIA

Basketball and Hockey Men Given
Letters—Season Ticket
Discussed Again

At a meeting of the Athletic Association yesterday afternoon a recommendation that members of this year's basketball team who have played in more than two-thirds of the games receive Institute insignia was discussed. P. M. Wentworth 1909, was awarded a T, and the following received T. B. B.; A. T. Bennis 1912, T. B. Parker 1911, W. B. Hargraves 1910, G. R. Lord 1910 and F. G. Taite 1909. The majority of the Association were of the opinion that it was best to keep special insignia for particular teams except the track team.

It was announced that it had been impossible to arrange for dual track meets with Bowdoin, Amherst, Williams or Brown, but it was hoped that Tech would be included in the triangular meet with Tufts and Maine. If so, that meet will probably come on May 1. Otherwise the Spring Meet which has been postponed will come on that date or on May 8.

W. B. Hargraves 1910, was recommended as manager of next year's basketball team.

It was reported that although the original scheme for season tickets had been abandoned, it was hoped that a new one could be devised.

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Next Saturday afternoon at the Field will be held an informal dual meet with Dartmouth. The latter team is now practicing on the Field.

On a motion of J. N. Stephenson 1909, it was voted that the men who ran in the half mile relay race with Tufts in February be recommended for T. A. A.

At the last meeting of the Advisory Council the following men were awarded T. H. T.: A. W. Paine 1909, A. A. Gould 1910, and V. G. Sloan 1912.

DARTMOUTH AT FIELD

Track Team From Hanover Now Training at Tech Field

The Dartmouth track squad is at present training every morning at the Field. On account of the bad weather conditions at Hanover, N. H., Dr. John W. Bowler, Dartmouth's coach, decided to have the members of the track team train during their Easter vacation at some more favorable location, and so permission was obtained from the Athletic Association to use the Field. The Dartmouth squad of about thirty men, is now hard at work preparing for the Pennsylvania relay carnival and their dual meet with Harvard. The headquarters for the squad is the Copley Square Hotel, but most of the men are staying with friends or relatives.

In training away from home during vacation, Dartmouth is only pursuing the policy that has been adopted by Yale, who is training at the University of Virginia, and by several other Northern colleges, who have found it impossible at home to round their athletes to form in time for the opening of the track season on account of weather. As the Dartmouth men will use the Field only in the morning their work will in no way interfere with the work of the Tech track men. The selection by Dartmouth of Tech Field is only another tribute to the excellence of the track.

A scrub athletic meet will be held at the Field Saturday, between the Dartmouth team and the few Tech men that are in any kind of shape. The regular events will be run off, and the visitors are expected to take all the honors.

The object of the meet is to give the fellows a chance to get acquainted and as an incentive to the men on both teams.

SEAT APPLICATIONS

Show Received Many Applications for Seats—Tickets Ready

"A fair chance for all" has been the watchword of the Show management this year, and they have lived up to it admirably in the new scheme which they have adopted for preventing men in lower classes from obtaining seats through friends in the higher classes. Although the large number of applications from the seniors as compared with the other classes would seem to indicate that the ruling has not been strictly adhered to, it has had enough effect to give juniors and underclassmen a much better chance, and it is safe to say that the publishing and blacklisting of the names of those who disobeyed the ruling under which their seats were assigned them, will pretty effectually put a stop to any such action in the future. Under the new system it was possible to allot seats much more satisfactorily, and comparatively few men failed to obtain the seats for which they applied. There is bound to be the usual number of kicks, of course; one man complained because his seats were in the middle of the orchestra seats, and another because his were second row in the balcony, but there was very little real cause for complaint.

Until Wednesday, April 14, applications will be received, and filled in the order received, as far as possible, from the seats which may remain. All seats already assigned must be paid for before this date, or they will be put on general sale. The tickets are ready at the Show office, room B, the Union, between one and two o'clock each day, and cannot be obtained at any other hour.

Harry Rapelye 1908, was a speaker at a meeting of Technology Club of Hartford, Conn., held recently. Mr. Sachs, the inventor of the non-arcing fuse, also spoke. There were 18 present.

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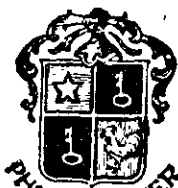
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CO-OP SOCIETIES

(Continued from page 1.)

beginning of each term is due solely to a dislike of spending any money at all.

The chief difference between the Institute Co-op and other co-operative corporations is in the distribution of its surplus funds. Instead of returning its profits, gained it is true from a reasonable scale of prices, to its members, it has used them for scholarship purposes. The distribution of the scholarship fund is in the hands of the scholarship committee of the Faculty. Recently the Bursar found that there was a call for a fund from which loans could be made to students in temporary need, and by his recommendation each year's surplus is divided equally between the two uses. This year about \$950.00 has been appropriated. Since the founding of the society in 1886, \$13,569 has been paid out, of which \$11,964 has gone to scholarships, 116 students received aid therefrom, and \$1,875 to the Bursar's loan fund.

The patronage of firms on the society's list is not easily determined, but there is evidence that it is large. The discounts offered are evidently sufficient to attract the members in spite of the lack of additional profit sharing.

SUN SPOTS

(Continued from page 1.)

good results have already been obtained, although it was only erected in December.

Dr. Hale showed many lantern slides in the course of his lecture, those of the site of the observatory and the view from Mt. Wilson being especially interesting.

At the monthly dinner of the Iowa Club on Saturday, April 3, Mr. H. A. Miller, chief engineer of the Charles River Basin Commission gave an account of the new dam and other improvements under construction in the Basin.

The officers recently elected for the ensuing year are as follows:

L. S. Borden, President; Harold Brown, Vice-president; G. S. Thomas, Secretary-treasurer; R. J. Haley, H. N. Crichton and A. J. Chantry members of the Executive Committee.

NOTICES

TECH SHOW.—Full rehearsal today—principals and chorus. R. F. Goodwin, Jr., Stage Manager. A7

1.00 P. M.—1909 Class Meeting, Huntington at 1 P. M., Huntington Hall. A7

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